

The Storm Chaser

Fall 03

A Publication of the National Weather Service Cleveland and Skywarn

Severe Weather Season In Review

It was an active severe weather season across northern Ohio and northwestern Pennsylvania. Devastating flooding and several tornadoes occurred over the course of the year. And, for the second year in row, the National Weather Service in Cleveland received over 400 reports of severe weather from its 30 county warning area.

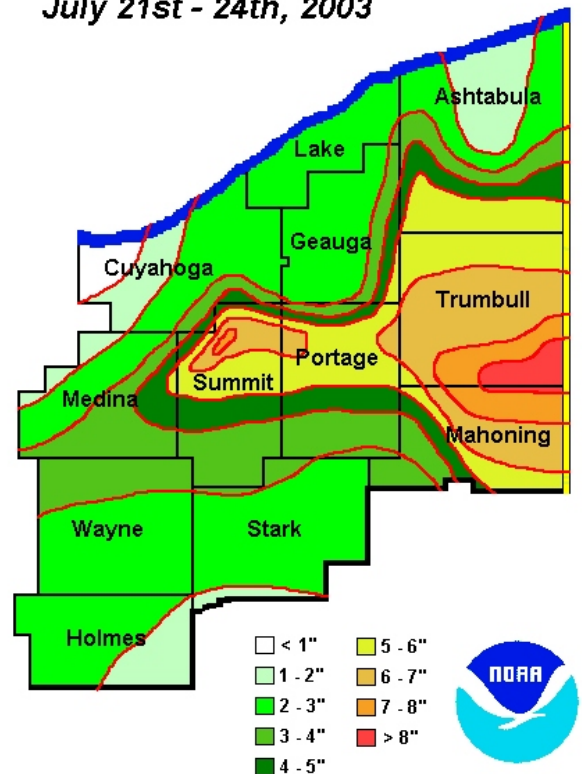
By far, the most devastating events of the year occurred during the later portion of July. Heavy rains during the month set the stage for historic flooding beginning on July 21st. Four people lost their lives as result of the flooding on the 21st. Summit, Portage, Trumbull and Mahoning Counties experienced record flooding when four to six inches of rain fell in just a couple of hours. Unofficial reports indicate that as much as 10.4 inches of rain may have fallen on the 21st in Hudson near the site of two of the fatalities. Devastating flooding also occurred in Crawford County, Pennsylvania with a bridge wash out resulting in one fatality near Cochran on the 21st. A new all time daily rainfall record of 4.65 inches was established at Youngstown on the 21st. Two days later on the 23rd, the Mahoning River at Youngstown crested at its highest level since January of 1959.

A second round of flash flooding occurred on July 27th. This time, Stark, Portage, Mahoning and southern Trumbull Counties bore the brunt of the flooding. The most devastating damage occurred in Stark County after both branches of Nimishillen Creek left their banks. The creek crested at an all time record high of 14.07 feet on the 28th at North Industry.

During the month of July, many areas saw over a foot of rainfall with reports of as much as 20

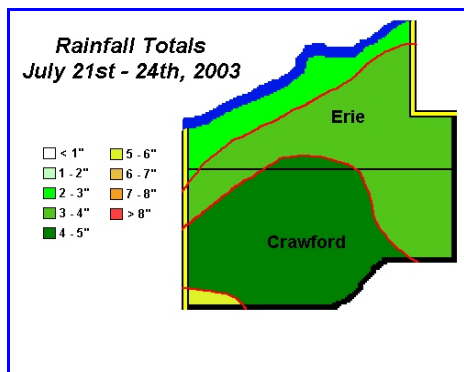
inches received from Portage County. Thousands of homes and businesses sustained flood damage during the month. Initial damage estimates topped \$250 million in the affected areas with damage in Summit County alone over \$100 million.

**Northeast Ohio Rainfall Totals
July 21st - 24th, 2003**



Seven tornadoes touched down in the Cleveland warning area this severe weather season. The first was a F0 in Portage County on July 7th. No significant damage occurred. Just three days later on July 10th, another F0 tornado touched down in Huron County near Collins. Again, no significant damage occurred. Then on July 21st, a F1 tornado caused approximately \$1 million in damages in

Mahoning County on the northeast side of Youngstown. This tornado had an intermittent damage path almost eight miles in length. Around

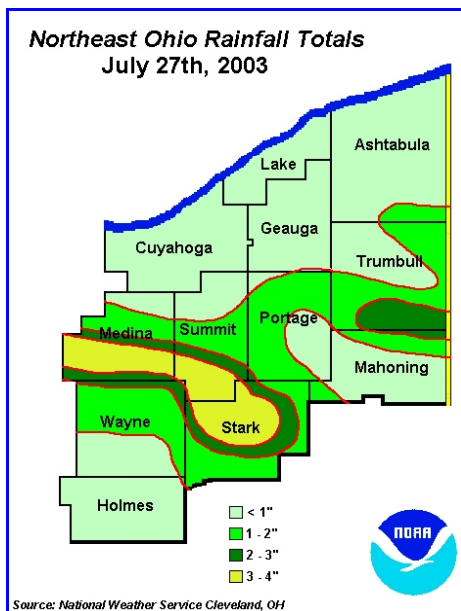


10 businesses and 80 homes were damaged. After a brief lull, two more tornadoes touched

down on August 3rd. Both were F0's and both occurred in Huron County. The first touchdown was near Kipton and the second to the north of Amherst. Both were on the ground for a very short distance and caused little damage.

Similar to last year, the severe weather season ended with a major event. Two tornadoes touched down on November 12th with one causing significant

damage in Wayne County. The Wayne County tornado touched down just southwest of Wooster and then tracked across the city. The tornado briefly intensified to F2 as it exited Wooster and damaged a few industrial buildings. The damage path from this tornado was approximately 12 miles in length and up to 100 yards in width.



Source: National Weather Service Cleveland, OH

2003 Tornadoes

Date	County	Rating
July 7 th	Portage	F0
July 10 th	Huron	F0
July 21 st	Mahoning	F1
August 3 rd	Lorain	F0
August 3 rd	Lorain	F0
November 12 th	Wayne	F2
November 12 th	Stark	F1

Approximately 100 homes and a dozen businesses were damaged. Preliminary damage estimates topped \$20 million. The second tornado of the day touched down in Stark County just north of Alliance. This tornado was rated a F1, was on the ground for around three miles and damaged four homes and one school building.

NWS Lightning Safety Awareness Week Proves Successful

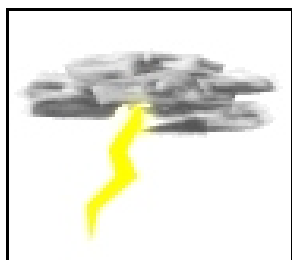
The NWS, in partnership with other Federal agencies and private organizations, hosted its 3rd annual National Lightning Safety Awareness Week from June 22-28, 2003. During this week the NWS's Lightning Safety Awareness Team provided hundreds of national and local media lightning safety interviews across the country.

The focus of this year's campaign was to target athletes involved in outdoor sports, such as baseball and soccer. Siri Mullinix, goal keeper for the Washington Freedom women's professional soccer team, helped reach out to the ever growing number of kids playing soccer and other sports by appearing on a new poster and recording a Public Service Announcement, both available at:

<http://www.lightningsafety.noaa.gov/multi-media.htm>

Through the Lightning Safety Awareness Week campaign, NWS and its partners hope that people will take the time to learn more about lightning risks and how to protect themselves from this deadly phenomena. In the United States, an average of 73 people are killed each year by

lightning, more than the annual number of people killed by tornadoes or hurricanes.



To gain an overview of lightning safety and view a listing of our campaign partners, please visit the

NWS National Lightning Safety Awareness Website at:

<http://www.lightningsafety.noaa.gov>.

NOAA Weather Radio News

A new NOAA Weather Radio transmitter will become operational this Fall in Southeastern

Michigan. The station is in Adrian, Michigan and will be broadcasting on a frequency of 162.450 Mhz. Coverage from this transmitter will include Williams, Fulton, Henry and Lucas Counties in Ohio. This transmitter will be operated by the Weather Forecast Office in Detroit Michigan.



A NOAA weather radio transmitter has been proposed for the Medina/Lorain county area. If accepted, this transmitter will most likely end up near Grafton. The time line for implementation and the frequency have not yet been determined. At the earliest, this transmitter would be on the air late spring of 2004.

New Flood Awareness Program Urges: "Turn Around, Don't Drown"

The NWS is working with the Federal Alliance for Safe Homes (FLASH) and other partners, to enhance public awareness of the dangers of driving or walking into flooded areas. They recently kicked off a nationwide flood safety campaign: "Turn Around, Don't Drown" - designed to help reduce flood-related deaths in the United States. Storm data records, accumulated over a 30-year period (1972–2001), show that the average annual death toll for floods is 127—compared to 73 for lightning and 65 for tornadoes. Approximately 80 percent of those deaths occur when people drive or walk into moving water.



Colorful posters, depicting the Turn Around, Don't Drown slogan on barriers used to block access to flooded roadways, and small (4 in. x 4 in.) automobile window stickers were created for the campaign. The image will also appear on the flood-safety card in FLASH's weathersafety package distributed to partners in the government, insurance industry, and nonprofit community. Program information, including links to the poster, signs, brochures and other materials is online at

<http://www.weather.gov/om/water/turnaround.shtml>.

Visitors are encouraged to download, reproduce and distribute the images through community civic organizations, schools, government agencies, or private businesses.

Severe Weather Awareness Weeks

The Ohio Committee for Severe Weather Awareness (OCSWA) has established the dates for the 2004 Severe Weather Awareness Week. The dates will be March 21st - 27th 2004. The statewide tornado test will be held Wednesday March 24th at 9:50 am.

OCSWA will once again sponsor a statewide severe weather poster contest. All schools (grades 1-6) throughout Ohio will have the opportunity to participate in the contest. Information will be sent to all school districts, grades 1-6 in late winter 2004. Winners of the poster contest get the opportunity to attend the awards ceremony at the Ohio State fair and receive several awards and prizes.

Skywarn will staff the National Weather Service office in Cleveland for the Ohio Statewide Tornado Test. Check in's from all amateur radio stations are encouraged.

The dates for the Pennsylvania Severe Weather Awareness Week for 2004 have been set. The dates will be March 14th - 20th, 2004.

Ohio Severe Weather Awareness Week
March 21st-27th 2004

Ohio Statewide Tornado Test
March 24th at 9:50 am

Pennsylvania Severe Weather Awareness Week
March 14th-20th, 2004

Pennsylvania Flash Flood Test
March 17th Time (TBD)

Visit us on the Web at:
<http://www.erh.noaa.gov/cle>

Skywarn Training 2004

All training this year will be conducted in March, April, May and the first week of June. Please have three potential dates in mind when you call. Also, class sizes must be 25 individuals or greater.

Classes will be offered Monday through Thursday, no Fridays, Saturdays or Sundays, NO exceptions. If planning an evening class, a 6:30 PM start time is preferred. **Please ensure a screen is available.** We are trying to consolidate classes. Please coordinate with other interested groups. Because of resources, we must limit the number of visits to each county to one or two. Large groups and Emergency Management Agencies (EMA) get schedule priority. We will require that all talks be coordinated with your local EMA. Schedule the training early and promote the talk. You will get much better attendance. To schedule a Skywarn training session you should do the following:

1. Coordinate with the County EMA
2. Ensure at least 25 people (Give an estimate of attendance)
3. Have a **location, date and time** established!
4. Provide me with an volunteer to help with registration.
5. Call Gary Garnet at 216-265-2382 ext 223 or Email at gary.garnet@noaa.gov to schedule training.



Skywarn spotters are required to update training every two to three years. Spotters who do not update their training will be removed from the Skywarn program.

The training schedule for SKYWARN will be posted on our web page www.erh.noaa.gov/cle/ in the Weather Safety section under Skywarn.



**Damage from July 21st Tornado
Youngstown, Ohio (Mahoning County)**

NWS Photo



**Flood Damages from July 21st Flash Flood
Crawford County, Pennsylvania**

Photo from Crawford County EMA



**Flood Damages from July 21st Flash Flood
Crawford County, Pennsylvania**

Photo from Crawford County EMA



**Flood Damage from July 21st Flash Flood
Cuyahoga Valley Scenic Railway**

Photo Courtesy Skywarn



**Damage from November 12th Tornado
Wooster, Ohio (Wayne County)**

NWS Photo



**Damage from November 12th Tornado
Wooster, Ohio (Wayne County)**

NWS Photo



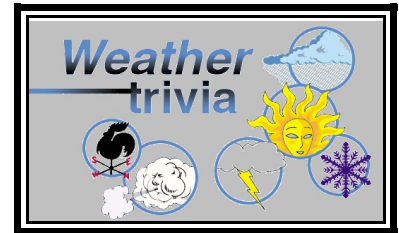
**Damage from November 12th Tornado
Wooster, Ohio (Wayne County)**

NWS Photo



**Damage from November 12th Tornado
Wooster, Ohio (Wayne County)**

NWS Photo



1. **What is the average number of tornadoes in Ohio each year?**
 - a) 7
 - b) 10
 - c) 16
 - d) 20
2. **What is the average number of tornadoes in Pennsylvania each year?**
 - a) 7
 - b) 10
 - c) 16
 - d) 20
3. **What generic type of cloud is a thunderstorm?**
 - a) Cumulonimbus
 - b) Nimbostratus
 - c) Tower Cumulus
 - d) Stratocumulus
4. **What is a term for a counterclockwise change in wind direction?**
 - a) Veering
 - b) Moderating
 - c) Freshening
 - d) Backing
5. **What is CAPE?**
 - a) Combined Adiabatic Potential Energy
 - b) Convective Adiabatic Potential Energy
 - c) Cumulative Advective Potential Energy
 - d) Convective Available Potential Energy
6. **The snowiest winter on record in Cleveland, Ohio occurred in which season?**
 - a) 1995-96
 - b) 1981-82
 - c) 2002-03
 - d) 1977-78

*Thank You For
Your Support!!!!*

Answers to Trivia Questions:

1. c) 16
2. b) 10
3. a) Cumulonimbus
4. d) Backing
5. d)
6. a) 1995-96 (101.1")